

Proceedings of the New York Entomological Society

(Meetings held in Room 129 of the American Museum of Natural History unless otherwise indicated).

Meeting of April 6, 1971

President Dr. Lee Herman presided; 15 members and five guests were present. Elected to Active Membership were: Mr. Lucia S. Tompkins of New York City; Mr. Billy Pettit of London, England and Mr. Jeffrey N. L. Stibick of Papua and New Guinea.

PROGRAM. **Venezuela: From Caracas to Amazonas.** Mr. Jerzy Grabowski, a chemical engineer by profession is an ardent entomologist. He showed his very fine film in color of his last trip to South America—summer of 1970. He plans to make a similar trip in the summer of 1971.

Dr. Topoff announced that the last meeting of the year would be a so-called "free-for-all" in which members could participate in showing slides or demonstrations of general interest to the audience.

The meeting was adjourned at 9:40 P.M.

DANIEL J. SULLIVAN, S.J., *Sec.*

Meeting of April 20, 1971

Vice-president Dr. Howard Topoff presided; 14 members and 9 guests were present. Dr. Linda H. Mantel of City College and Miss Bettina Bergh of Little Neck, N.Y., were proposed for Active Membership.

The Secretary read a letter of thanks from Roland R. McElvare in appreciation of the Society's resolution adopted at its Annual Meeting to send special greetings to the Honorary Members.

PROGRAM. **Arthropod Behavior: On the Land and in the Sea.** Dr. Edward Hodgson of Tufts College spoke on learning and special habituation in cockroaches. His research involved cockroach escape behavior and the neurophysiological processes involved in habituation when repeated stimuli such as air streams are directed at the cerci. The escape response was diminished and Dr. Hodgson explained the biochemistry of this kind of habituation.

The meeting was adjourned at 9:20 P.M.

DANIEL J. SULLIVAN, S.J., *Sec.*

Meeting of May 4, 1971

President Dr. Lee Herman presided; 17 members and 5 guests were present.

Elected to Active Membership were: Dr. Linda H. Mantel of City College and Miss Bettina Bergh of Little Neck, N.Y.

Dr. Michael J. Abbatiello of the State University at Farmingdale, L.I., was proposed for Active Membership.

PROGRAM. **The Sensuous Butterfly—Coming of Age in Rhopalocera.** Dr. Arthur Shapiro of the Division of Science and Engineering of Richmond College, Staten Island, N.Y.,

discussed the relationship between population biology and sexual behavior on the basis of the epigamic behavior. "Territoriality" for instance, according to Dr. Shapiro, is probably not really a population-limiting factor. Instead, such epigamic behavior as "hill-topping" in some of the Lepidoptera he has studied, serves merely to bring the sexes together. The meeting was adjourned at 9:15 P.M.

DANIEL J. SULLIVAN, S.J., *Sec.*

Meeting of May 18, 1971

Vice-president Dr. Howard Topoff presided; 17 members and 5 guests were present. Dr. Michael J. Abbatiello of the State University at Farmingdale, L.I., was elected to Active Membership.

Dr. David Sheby of Pratt Institute and the Rockefeller University was proposed for Student Membership. Because this was the last meeting of this academic year, the motion was made by Dr. Lucy Clausen and voted unanimously by the members present, that the By-Laws be suspended in order to permit the election of Mr. Sheby. Mr. Sheby was elected to Student Membership.

PROGRAM. Member Participation Night. Dr. Howard Topoff introduced various members in attendance who displayed items and collections of entomological interest ranging from Chinese art to Egyptian scarabs. Live and dead specimens of various insects such as cockroaches, beetles, Gypsy Moth larvae, etc. were passed through the audience for closer scrutiny. Slides of ants carrying water in their jaws were also shown.

Finally a "honey-tasting" session, organized by Miss Helen McCarthy, afforded members the opportunity to taste representative types of honey from all over the world. These jars of honey were then raffled off to the various members.

The last meeting of the 1970-1971 academic year was adjourned at 9:30 P.M.

DANIEL J. SULLIVAN, S.J., *Sec.*

Meeting of October 5, 1971

President Dr. Lee Herman presided; 18 members and 2 guests were present. Dr. Herman announced that Mr. Robert Buckbee would no longer be able to serve as the Society's "Business Manager" since he was retiring and moving to Florida. Mr. Dominick J. Pirone of Fordham University has agreed to succeed him.

Mr. Ephraim C. Shader of Stony Brook, N.Y., was proposed for Active Membership. Mr. David E. Foster of the University of Idaho and Mr. Felix J. Bocchino of Fordham University were proposed for Student Membership.

PROGRAM. The Smithsonian Expedition to Africa. Dr. Karl V. Krombein, Senior Entomologist of the Smithsonian Institution, Washington, D.C., was accompanied on this expedition by Dr. and Mrs. Paul Spangler. Dr. Krombein explained that the reason for the trip was twofold: first, the opportunity to improve the Smithsonian's African insect collection by offering to share duplicates of such fauna which were in the museum in Kenya and to do on-the-spot collecting as well. Secondly, a visit to South Africa would provide insects for the Hall of Insects exhibit—especially individuals of a mound-building termite colony. Both objectives were met with about 17,500 insects sent to Washington comprising 9,000 species of which 60-80% were new to the museum. In addition, a representative termite

colony was excavated which was probably 75 years old, being 25 feet wide and over 5 feet high.

The meeting was adjourned at 9:20 P.M.

DANIEL J. SULLIVAN, S.J., *Sec.*

Meeting of October 19, 1972

Vice-president Dr. Howard Topoff presided; 9 members and 5 guests were present. Mr. Ephriam C. Shader of Stony Brook, N.Y., was elected to Active Membership. Elected to Student Membership were: Mr. David E. Fpster of the University of Idaho and Mr. Felix J. Bocchino of Fordham University.

PROGRAM. Enigma of Insect and Plant Diseases Caused by Mycoplasma-like Agents. Dr. Karl Maramorosch of the Boyce Thompson Institute for Plant Research, Yonkers, New York, explained that initially these organisms were considered to be viruses. Since 1967 a better understanding of their mycoplasma-like nature has evolved. Systematically they seem to be close to bacteria and yet no actual relationship has been found. They differ from bacteria in not having a cell wall, but unlike viruses they contain both DNA and RNA. Mycoplasma-like agents cause at least 70 diseases in plants (such as aster yellows) and in such animals as sheep, dogs, chickens, turkeys and humans (PPL0). Insects such as leafhoppers are vectors of these mycoplasma-like organisms and are themselves sometimes killed in the process of transmission. They also have their own viruses.

The meeting was adjourned at 9:25 P.M.

DANIEL J. SULLIVAN, S.J., *Sec.*

November 2, 1971—Election Day—No Meeting

Meeting of November 16, 1971

Vice-president Dr. Howard Topoff presided; 12 members and 4 guests were present. Dr. Mohammad Shadab of the American Museum of Natural History was proposed for Active Membership.

Mr. Louis Trombetta of Fordam University was proposed for Student Membership.

PROGRAM. A World Nature Club Trip to Colombia, South America. It was recalled that last February, Dr. Donald Messersmith of the Department of Entomology, University of Maryland, gave a lecture to the Society on his trip to Africa, Iceland and Greenland. Dr. Messersmith showed slides and many insect specimens which he collected on the Colombia trip. His special interest is Culicoides (Ceratopogonidae)—the Biting Midges. In three weeks he collected almost 4,000 specimens of many insect families which have been deposited with the U.S. National Museum.

The meeting was adjourned at 9:55 P.M.

DANIEL J. SULLIVAN, S.J., *Sec.*

Meeting of December 7, 1971

Vice-president Dr. Howard Topoff presided; 17 members and 4 guests were present. Dr. Mohammad Shadab of the American Museum of Natural History was elected to Active Membership.

Mr. Louis Trombetta of Fordham University was elected to Student Membership.

PROGRAM. **Communication by Sound in Insects.** Dr. René Guy Busnel, Visiting Professor at the City College of New York discussed his research in the field of communication among insects. The role of acoustics in the behavior of insects, especially the Orthoptera, was studied by Dr. Busnel and his students for ten summers along the coast of southern France. Most of the recording on color film, with sound track and later a tape recorder was done near the city of Montpellier. The influence of sound on the mating behavior of these insects was shown in the film. The interesting phenomenon that various artificial and apparently unrelated noises such as whistles, bird calls, etc., induced was also shown.

The meeting was adjourned at 9:20 P.M.

DANIEL J. SULLIVAN, S.J., *Sec.*

Meeting of December 21, 1971

In the absence of the President and the Vice-president the meeting was called to order by the Secretary, Dr. Sullivan; 13 members and 3 guests were present. There were no proposals for membership.

PROGRAM. **The Waika Indians of the Upper Orinoco.** Once again the members were treated to an excellent color film, narrated by the speaker of the evening, Mr. Jerzy Grabowski. In his introduction he recalled the fact that he had made several trips to this vast region of South America and had shown films to the society on previous occasions. This time his emphasis was on the Waika Indians and he described their customs and rituals.

The meeting was adjourned at 9:25 P.M.

DANIEL J. SULLIVAN, S.J., *Sec.*

Meeting of January 4, 1972—The Annual Meeting

Vice-president Dr. Howard Topoff presided; 13 members and 3 guests were present. On behalf of the Nominating Committee, Dr. Topoff presented the list of candidates for office for the year 1972 as follows:

President—Dr. Howard Topoff
 Vice-president—Father Daniel J. Sullivan
 Secretary—Mrs. Joan DeWind
 Assistant Secretary—Miss Betty White
 Treasurer—Dr. Winifred B. Trakimas
 Assistant Treasurer—Mrs. Patricia Vaurie
 Trustees—Dr. James Forbes and Dr. David Miller

Upon motion made and duly seconded the candidates were unanimously elected to office. Mr. Martin Kolner of Arizona State University was proposed for Student Membership. Dr. Topoff explained to the membership the concern of the Executive Committee about various ways in which our Regular Meetings could be improved from the standpoint of wider publicity and better contact between members in attendance. He noted that financial considerations as well as union regulations restricted our use of other rooms and facilities for light refreshments such as coffee. Helpful suggestions from the audience were solicited.

PROGRAM. **Homing Behavior of Digger Wasps.** Mr. Matt Cormons used photographs from his Master's dissertation which he completed at the University of Wisconsin to illustrate his talk. He was concerned with what cues the wasp *Microbembex monodonta* (Hymenoptera: Sphecidae) in order to find her burrow which she had previously covered with sand. In general his results indicated that visual rather than olfactory cues were essential. In

future work he will refine his techniques to determine just how much cues influence the wasps homing behavior. (An abstract follows.)

The meeting was adjourned at 9:35 P.M.

DANIEL J. SULLIVAN, S.J., *Sec.*

HOMING BEHAVIOR OF DIGGER WASPS

The homing behavior of the digger wasp *Microbembex monodonta* was studied for three seasons at Spring Green, Wisconsin. This wasp nests in sandy, nearly barren areas. A provisioning female will leave and return to her nest, a burrow in the sand, many times during the day. Each time she leaves she kicks sand over the burrow entrance making it virtually undetectable to the human observer. The wasp, however, finds her burrow without hesitation upon each return.

This study investigated the potential cues used by a homing wasp. Various methods were used in attempts to disorient the wasp. These methods included: trampling the sand surface; covering the nest area with various materials; placing variously-sized and shaped objects around the burrow and then shifting them and masking potential distant visual and olfactory cues from the wasp.

The results suggest the following: *M. microdonta* uses distant cues to get into the general nest area. Local visual cues, including relief patterns on the sand surface enable the wasp to dig precisely at the nest entrance. Olfactory, auditory, temperature and air current cues are apparently unimportant to a homing wasp since in the absence of these cues the wasp was apparently not disoriented. The results are basically similar to those obtained by investigators working with other species of sphecids.

MATT CORMON

Meeting of January 18, 1972

President Dr. Howard Topoff presided; 11 members and 4 guests were present. Presentation of the reports of the Treasurer and Publications Committees was postponed.

Mr. Martin Kolner of the Department of Zoology of Arizona State University was elected to Student Membership.

Miss Janice Gillespie of the Department of Entomology of the University of Idaho was proposed for Student Membership.

Subsequent to an earlier discussion on ways and means of attracting a wider audience to our meetings Dr. Topoff said that a review of past attendance showed some slacking off in the past year. Our Society has no institutional or other financial backing. The room is rented and the proposed refreshments would mandate union help and incur financial problems. Negotiations are in progress. He again solicited suggestions from the membership.

PROGRAM. Numerical Taxonomy in Studying Cockroaches. Dr. Ivan Huber of the Department of Biology of Fairleigh Dickinson University used photographs and two and three dimensional graphs to illustrate his talk. He compared phyletic classification of orthodox taxonomy and phenetic or numerical taxonomy of cockroaches and was of the opinion that the latter system indicated more highly refined relationships. (An abstract follows.)

The meeting was adjourned at 10:00 P.M.

JOAN M. DEWIND, *Sec.*

A TAXONOMIST'S VIEW OF THE COCKROACH

Taxonomy is currently undergoing both a resurgence and an upheaval. The availability of computers for processing large amounts of data about organisms and the appearance of new statistical techniques for analyzing the data have been principally responsible for this revolution.

The three main approaches to biological classification: phyletic, phenetic and cladistic, were briefly described and examples of each were shown.

The work discussed was a study of 37 species of cockroaches utilizing both adult and nymphal instars. McKittrick's phyletic classification was illustrated with slides of representative species, accompanied by an exposition of the reproductive biology of cockroaches, on which this classification is based. A phenetic (statistical) analysis of McKittrick's data produced taxonomic arrangements similar to the ones she produced using phyletic methods. Three-dimensional models of relationships among the species based on morphological similarities (computed from centroid component analyses of the author's data) were displayed. Such models help resolve taxonomic problems arising from unrelated species with similar morphological adaptations for occupying similar ecological niches.

IVAN HUBER

Meeting of February 1, 1972

President Dr. Howard Topoff presided; 22 members and 24 guests were present. Janice Gillespie, Department of Entomology, University of Idaho was elected to Student Membership.

David A. Brody, Department of Entomology, American Museum of Natural History was proposed for Active Membership.

Dr. Winifred Trakimas Treasurer, reported on the state of the Society's treasury for 1971.

PROGRAM. Introduction to the World of Spiders. Dr. John A. Cooke, Curator of Arachnids of the Department of Entomology of the American Museum of Natural History showed slides and three movies for which he acted as consultant. His discussion of spider behavior with splendid illustrative material was most enthusiastically received.

The meeting was adjourned at 9:40 P.M.

JOAN M. DEWIND, *Sec.*

Meeting of February 15, 1972

President Dr. Howard Topoff presided; 13 members and 13 guests were present. David A. Brody of the Department of Entomology of the American Museum of Natural History was elected to Active Membership.

Dr. Ivan Huber, Department of Biology, Fairleigh Dickinson University was proposed for Active Membership.

PROGRAM. Comparative Behavior of Army Ants. Dr. Carl W. Rettenmeyer, Biological Sciences Group at the University of Connecticut, detailed the behavior of two species of army ants and illustrated his talk with slides.

The meeting was adjourned at 9:45 P.M.

JOAN DEWIND, *Sec.*

COMPARATIVE BEHAVIOR OF NEOTROPICAL ARMY ANTS

The Neotropical army ants include about 142 species, but our knowledge of their biology is based almost exclusively on four species in the genera *Eciton* and *Neivamyrmex*. One of the most specialized species, *Eciton hamatum*, is the best known, largely because it is primarily epigaeic. Its raid columns, emigrations, and nests or bivouacs are usually above ground where they can be observed and followed. Most army ant species are subterranean, and the meager information on their biology has been obtained mainly from chance encounters. *Labidus praedator* is one species that has bivouacs underground or in logs. It is a typical of most army ants because it has swarm raids. These are much smaller and more variable in duration, time of day, and direction than the swarm raids of *E. burchelli*. Captured prey is carried back to the bivouac along columns leading in different directions and disappearing into holes in the ground. These columns must be constantly changed and linked underground to keep up with the advancing swarm front. One emigration observed for about 16 hours in Costa Rica demonstrated that the brood has a much greater range in age than that of *Eciton* spp. The predominant type of brood (eggs, larvae, or cocoons) carried by the ants changed within the same emigration. That emigration also demonstrated that colonies of *L. praedator* can have over one million ants and a very large number of inquillines. Over 1,000 insect guests and 6,000 mites were taken from the single emigration, but those totals must be a small percent of the guests living within that colony.

CARL W. RETTENMEYER